Empowering Cardiac Physiologists: Enhancing CIED Patient Outcomes

Can Physiologists develop their role to highlight patients who would benefit from a CIED system upgrade prior to generator replacement?

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Introduction

CIED implant rates have remained high over the last ten years. With increased life expectancy, more CIEDs are requiring replacement due to their limited longevity (1). Recently the number of generator changes being performed has increased; nationally by 13%; and by 33% within UHL NHS trust. The demand for generator changes is expected to increase in the future. This may lead to increased urgent hospital admissions from device clinic (current average 4.6 per month) which may be avoidable and therefore a waste of resources.

Additionally, a CIED patient's medical status can change. CIED patients are often discharged from Physician care and are followed up in a Physiologist-led device clinic. There is increasing evidence to show the benefits of assessing patients prior to generator change to provide optimal device prescription (2, 3). Since the Covid pandemic and the move towards remote monitoring, patients are not getting screened appropriately prior to generator change.

Purpose

- Explore, understand and stabilise the current system
- Improve the process when patients are listed for a generator change
- Provide better evidence based care (2, 3)

Methods

- Drive Cardiac Physiology Services
- Collect retrospective and current data on the actual activity performed and demand required
- Educate fellow scientists on pacing-induced cardiomyopathy and the long term management of pacemaker patients
- Consider new technologies (ie: CSP; 4)
- Collaborate with multi-disciplinary teams to provide the best care for patients
- Develop a more reliable and durable system for managing patients who are nearing generator replacement

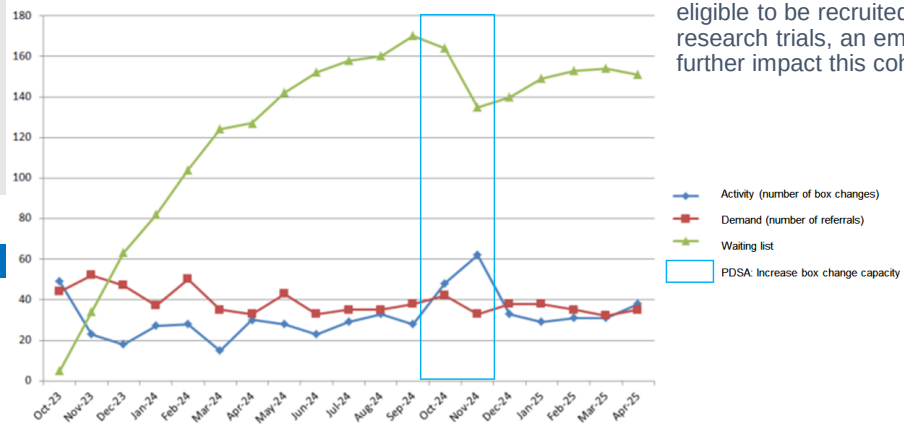

Figure One: Supply v Demand and subsequent waiting list

Results

Demand > Capacity. 405 box changes per year versus demand of 435 = growing waiting list = increased admissions.

PDSA cycle: create more capacity - 56 extra procedure slots (above average activity). Negative impact on other waiting lists (ie: implants, EP, PCI), however this did reduce waiting list and hospital admissions (average 4.6/month to 3.3/month).

Nonetheless, patients still require assessment prior to generator change and enhanced listing will result in better cath lab procedure planning and reduce staff niggles.

A pilot study successfully highlighted a number of patients who met criteria for a CEID system upgrade. This process also highlighted patients who may be eligible to be recruited to conduction system pacing research trials, an emerging technology which may further impact this cohort of patients (4).

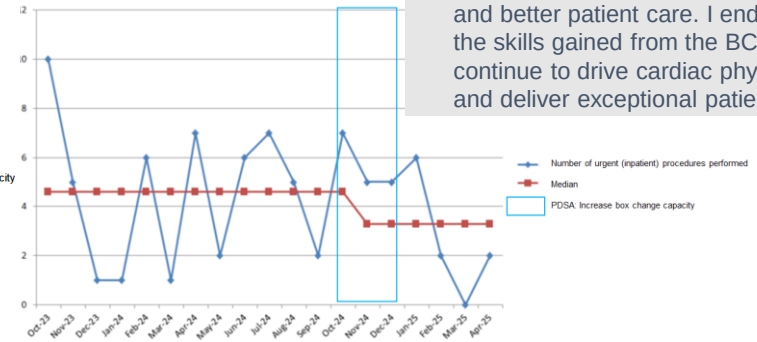

Figure Two: Number of Urgent (inpatient) procedures

Conclusion

This is an ongoing service improvement project. With high demand and subsequent long waiting lists across multiple cath lab procedures (angiography/PCI, electrophysiology, device implantation, structural intervention), innovation methods and techniques to maximise productivity should continue to be used to manage the waiting lists.

This project may suggest the need to increase capacity, but in time of financial instability, every effort should be made to maximise existing capacity, which will reduce hospital admissions (figure 1 and 2).

Developing the scope of Cardiac Physiologists can result in better procedure planning; and therefore improved efficiency and better patient care. I endeavour to apply the skills gained from the BCS ELP to continue to drive cardiac physiology services and deliver exceptional patient care.

Emerging Leaders Programme
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References

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